

# METHOD AND APPARATUS TO VERIFY TYPE SAFETY OF AN APPLICATION SNAPSHOT

## ABSTRACT

One embodiment of the present invention provides a system for verifying type safety of an application snapshot. This application snapshot includes a state of an executing program that is moved from a first computing device to a second computing device across a network in order to continue execution on the second computing device. The system operates by receiving the application snapshot from the first computing device on the second computing device, wherein the application snapshot includes a subprogram, an operand stack, and a point of execution. The system then examines the application snapshot to identify one or more subprograms and the point of execution within the subprograms. Next, the system examines the subprogram to determine an expected structure of the operand stack at the point of execution. After the expected structure of the operand stack has been determined, the system verifies that the state of the application snapshot on the second computing device does not violate type safety in the sense of a platform-independent programming language. Execution of the application snapshot is resumed on the second computing device if the verification does not fail.